



L I N N Æ U S' s
SYSTEM OF BOTANY,
SO FAR AS RELATES TO HIS
CLASSES and ORDERS of PLANTS;

Illustrated by FIGURES entirely New,
WITH
Copious EXPLANATORY DESCRIPTIONS.

DRAWN UP FOR THE USE OF HIS PUPILS

BY
W I L L I A M C U R T I S,

AUTHOR of the FLORA LONDINENSIS, and TEACHER of BOTANY in LONDON.

L O N D O N :

Printed for and Sold by the AUTHOR, No. 51, Gracechurch-Street; and B. WHITE, Bookseller, Fleet-Street.

MDCCLXXVII.

188637

T O

JOHN GIDEON LOTEN, *Esq*;

FORMERLY GOVERNOR OF THE ISLANDS

CEYLON and CELEBES,

THIS ATTEMPT TO ILLUSTRATE

LINNÆUS'S SYSTEM of BOTANY,

Is, with the greatest deference and respect,

Inscribed, by his obliged Friend,

The A U T H O R.

OCT 5 1925 A.C.U.

P R E F A C E.

AMONG the various Systems of Botany, which have from time to time been communicated to the public, none appears to have been so universally received, so firmly established, or so likely to be continued to future generations, as that of the great, the celebrated *Linnaeus*: and had the drawings which have been given to illustrate it, been equal to the Authors descriptions, it would doubtless have made a more rapid progress, and been more generally and perfectly understood than it is at present.

Those who in this country have undertaken to explain, and make a knowledge of his system easy, (and which of late have been sufficiently numerous) have given us over and over again the same hackneyed plate of the Classes, retaining all its imperfections, and gradually accumulating new ones; so that the designs which were at first scarcely intelligible, are now rendered useless, nay worse, as they tend to mislead.

I may appeal to any Student in Botany, who has attempted to acquire a knowledge of the Classes by the common figures, if this be not strictly true; and I may venture to assert, that they are incapable of communicating what they are intended to represent. In the figure of the class Icosandria for instance, what appearance is there of the insertion of the Stamina into the Calyx? or in the class Polyandria into the Receptaculum? What inadequate ideas do the figures of the classes Monadelphia, Diadelphia, Polyadelphia and Syngenesia convey! but more particularly Polyadelphia: and how abstruse are the representations of Monoecia, Dioecia and Polygamia!

With respect to the Orders, the attempt of exhibiting them at one view, is, so far as I know, altogether novel; many of them, particularly those of the class Syngenesia, are fully as difficult as any of the Classes, and seem equally to require the same kind of explanation.

If proper attention be paid to the figures and explanations here given, I flatter myself, a knowledge of the Classes and Orders will readily be acquired; and the Student having overcome what has been a stumbling block to many, will be tempted to make a further progress in this useful and delightful science, in which I wish him much pleasure and improvement.

WILLIAM CURTIS.

INTRODUCTION.

PREVIOUS to the students entering on the perusal of the following pages, it may be proper for him to be informed, that the celebrated system of our illustrious Author, is established on a well grounded supposition, that different sexes exist in Plants as well as in *Animals, hence it has been called the sexual system.

Accordingly, some flowers have been distinguished as *male*, some as *female*, and others as *hermaphrodite*.

The *Filament*, or Thread, supporting the *Anthera*, or Chive, which contains the *Pollen*, or fertilizing dust, is considered as the MALE, and called by the general name of STAMEN, in the plural number STAMINA, *vid. pl. 1, fig. 1.*

A Flower containing this part only is called a *male flower*.

The little pillar, or column, in the center of the flower, which in its lower part contains the seeds in embryo, is distinguished as the FEMALE, and called PISTILLUM, in the plural number PISTILLA. It is generally divisible into three parts; the *Stigma*, or top; the *Stylus*, or middle; and the *Germen*, (which becomes the future seed-vessel) or bottom, *vid. pl. 2. fig. 1.*

A Flower containing this part only is called a *female flower*.

And when both these occur in the same flower, which is most usually the case, it is then called an *hermaphrodite flower*.

From this allusion to the Sexes, LINNÆUS has taken the names of his Classes, which are derived from the Greek, and are to be met with in most introductory treatises on Botany. But as this little performance would have been incomplete without them, they are here subjoined together with their explanations.

CHARACTERS

*Those who wish to see this subject more fully treated of, may consult the Botanical Dictionary of the ingenious COLIN MILNE, where it is discussed in a very copious and satisfactory manner.

CHARACTERS of the CLASSES.

- 1 MONANDRIA; from *μόνος* MONOS *unicus* one, and *άνηρ* ANER *maritus* a male.*
One Stamen† in an hermaphrodite flower.
- 2 DIANDRIA; from *δισ* DIS *bis* two, and *άνηρ* ANER *maritus* a male.
Two Stamina in an hermaphrodite flower.
- 3 TRIANDRIA; from *τρεῖς* TREIS *tres* three, and *άνηρ* ANER *maritus* a male.
Three Stamina in an hermaphrodite flower.
- 4 TETRANDRIA; from *τέσσαρες* TESSARES *quatuor* four, and *άνηρ* ANER *maritus* a male.
Four Stamina in an hermaphrodite flower.
- 5 PENTANDRIA; from *πεντε* PENTE *quinque* five, and *άνηρ* ANER *maritus* a male.
Five Stamina in an hermaphrodite flower.
- 6 HEXANDRIA; from *εξ* EX *sex* six, and *άνηρ* ANER *maritus* a male.
Six Stamina in an hermaphrodite flower.
- 7 HEPTANDRIA; from *επτα* EPTA *septem* seven, and *άνηρ* ANER *maritus* a male.
Seven Stamina in an hermaphrodite flower.
- 8 OCTANDRIA; from *οκτω* OCTO *octo* eight, and *άνηρ* ANER *maritus* a male.
Eight Stamina in an hermaphrodite flower.
- 9 ENNEANDRIA; from *εννέα* ENNEA *novem* nine, and *άνηρ* ANER *maritus* a male.
Nine Stamina in an hermaphrodite flower.
- 10 DECANDRIA; from *δέκα* DEKA *decem* ten, and *άνηρ* ANER *maritus* a male.
Ten Stamina in an hermaphrodite flower.
- 11 DODECANDRIA; from *δωδεκα* DODEKA *duodecim* twelve, and *άνηρ* ANER *maritus* a male.
Twelve to nineteen Stamina in an hermaphrodite flower.
- 12 ICOSANDRIA; from *είκοσι* EIKOSI *viginti* twenty, and *άνηρ* ANER *maritus* a male.
Stamina growing to the inside of the Calyx, not to the Receptacle.

13 POLYANDRIA

*One chief aim in this translation, has been to convey to the English reader the Authors explanation of his system in terms the *least* exceptionable: if therefore there appears a slight deviation from the strict sense of some few of the words, it must be attributed to this motive.

†See Introduction page 1.

- 13 POLYANDRIA ; from πολὺς POLUS *multus* many, and ἀνὴρ ANER *maritus* a male.
Having from twenty to a thousand Stamina inserted with the Pistillum into the Receptacle.
- 14 DIDYNAMIA ; from δις DIS *bis* double, δύναμις DUNAMIS *potentia* power.
Having four Stamina: two long and two short.
- 15 TETRADYNAMIA ; from τέσσαρες TESSARES *quatuor* four, and δύναμις DUNAMIS *potentia* power.
Having six Stamina: four long and two short.
- 16 MONADELPHIA ; from μόνος MONOS *unicus* one, and ἀδελφός ADELPHOS *frater* a brother.
The Stamina united by their filaments into one body.
- 17 DIADELPHIA ; from δις DIS *bis* two, and ἀδελφός ADELPHOS *frater* a brother.
The Stamina united by their filaments into two bodies.
- 18 POLYADELPHIA ; from πολὺς POLUS *multus* many, and ἀδελφός ADELPHOS *frater* a brother.
The Stamina united by their filaments into three or more bodies.
- 19 SYNGENESIA ; from σύν SUN *simul* together, and γένεσις GENESIS *generatio* generation.
The Stamina united by their Antheræ (separated by their Filaments) into a cylinder.
- 20 GYNANDRIA ; from γυνή GUNE *femina* a female, and ἀνὴρ ANER *maritus* a male.
Stamina sitting on the Pistillum, not on the Receptacle.
- 21 MONOECIA ; from μόνος MONOS *unicus* one, and οἰκία OIKIA *domus* a house.
Male and female flowers on the same plant.
- 22 DIOECIA ; from δις DIS *bis* two, and οἰκία OIKIA *domus* a house.
Male flowers produced on a separate plant from the female.
- 23 POLYGAMIA ; from πολὺς POLUS *multus* many, and γάμος GAMOS *nuptiæ* marriages.
Hermaphrodite and male or female flowers on the same plant.
- 24 CRYPTOGAMIA ; from κρυπτός KRYPTOS *occultus* hidden, and γάμος GAMOS *nuptiæ* marriages.
The fructification hidden within the fruit, or produced in some unusual manner.

The

The ORDERS are taken from the *Pistilla* as the CLASSES are from the **Stamina*: but those of the class *Syngenesia* differ from the rest.†

The terms *Monogynia*, *Digynia*, *Trigynia*, &c. are derived from *γυνή femina* a female, the Greek numbers *μόνος, δις, &c.* which signify one, two, and so on, being prefixed. In numbering the *Pistilla* we count from the bottom of the Styles: but if the Styles are wanting, the calculation is made from the number of the Stigmata.

A more particular explanation of the terms in the Orders of the Class *Syngenesia*.

- 1 POLYGAMIA ÆQUALIS consists of many florets or little flowers, all of which have both *Stamina* and a *Pistillum*.

It is called æqualis, or equal, because the Polygamy is equal over the whole flower.

- 2 POLYGAMIA SUPERFLUA: the hermaphrodite flowers in the center producing perfect seed: the female flowers likewise in the circumference producing perfect seed.

It is called superflua, or superfluous, as perfect seed is capable of being producea by the hermaphrodite flowers in the center, without the concurrence of the female flowers in the circumference.

- 3 POLYGAMIA FRUSTRANEA; when the hermaphrodite flowers in the center produce perfect seed; but the flowers which form the circumference produce no perfect seed.

It is therefore called frustranea, as the flowers in the circumference answer no purpose in the production of the seed.

- 4 POLYGAMIA NECESSARIA; when the hermaphrodite flowers in the center produce no seed; but the female flowers which are in the circumference produce perfect seed.

It obtains the name of necessaria from the flowers in the circumference being necessary to the production of perfect seed.

- 5 POLYGAMIA SEGREGATA; when the florets are furnished with partial Calyces or Cups, inclosed within one common Calyx.

It is called segregata, the florets being separated from one another by the partial Calyces.

- 6 POLYGAMIA MONOGAMIA contains flowers which are simple and no ways compounded: which is implied by the term *monogamia*.

*This only takes place however in the first thirteen classes.

†As do also many of the others.

L I N N Æ U S' s

SYSTEM of BOTANY, &c.

The Vegetable Kingdom is divided by LINNÆUS into Twenty-four Classes, each of which is founded on the Number, Infertion, Equality, Connection, Situation, or Absence of the Stamina, considering them at the same time as the Male Sexual Organs.

On Number only are formed the first eleven Classes, from Monandria to Dodecandria.

On Number and Infertion, Icofandria and Polyandria.

On Number and Equality, Didynamia and Tetradynamia.

On Connection, Monadelphia, Diadelphia, Polyadelphia and Syngenefia.

On Infertion only, Gynandria.

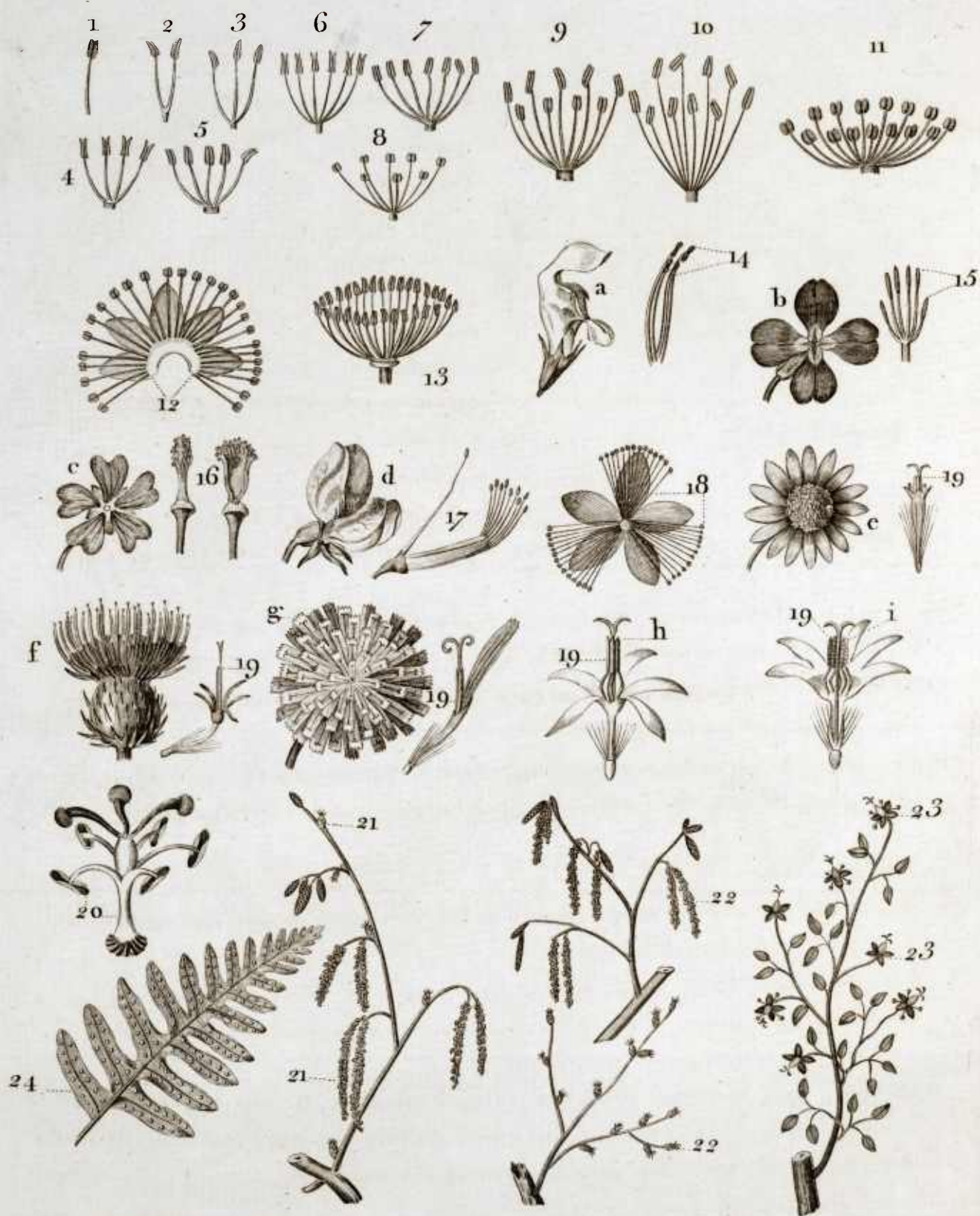
On Situation, Monoecia, Dioecia and Polygamia.

On Absence, Cryptogamia.

The Names of the Twenty-four Classes.

- 1 Monandria.
- 2 Diandria.
- 3 Triandria.
- 4 Tetrandria.
- 5 Pentandria.
- 6 Hexandria.
- 7 Heptandria.
- 8 Octandria.
- 9 Enneandria.
- 10 Decandria.
- 11 Dodecandria.
- 12 Icosandria.
- 13 Polyandria.
- 14 Didynamia.
- 15 Tetradynamia.
- 16 Monadelphia.
- 17 Diadelphia.
- 18 Polyadelphia.
- 19 Syngenefia.
- 20 Gynandria.
- 21 Monoecia.
- 22 Dioecia.
- 23 Polygamia.
- 24 Cryptogamia.





Engraved for W. Curtis's "Botanic Lectures."

Sowerby delin.

Sansom sculp.

Classes explained and illustrated by Figures.

- | | | |
|-------|---------------------|--|
| No. 1 | <i>Monandria</i> | hermaphrodite flowers* having 1 Stamen, <i>fig.</i> 1. |
| 2 | <i>Diandria</i> | 2 Stamina, <i>fig.</i> 2. |
| 3 | <i>Triandria</i> | 3 Stamina, <i>fig.</i> 3. |
| 4 | <i>Tetrandria</i> | 4 Stamina, <i>fig.</i> 4. |
| 5 | <i>Pentandria</i> | 5 Stamina, <i>fig.</i> 5. |
| 6 | <i>Hexandria</i> | 6 Stamina, <i>fig.</i> 6. |
| 7 | <i>Heptandria</i> | 7 Stamina, <i>fig.</i> 7. |
| 8 | <i>Oëandria</i> | 8 Stamina, <i>fig.</i> 8. |
| 9 | <i>Ennéandria</i> | 9 Stamina, <i>fig.</i> 9. |
| 10 | <i>Decandria</i> | 10 Stamina, <i>fig.</i> 10. |
| 11 | <i>Dodecandria</i> | from 12 to 20 Stamina inclusive, <i>fig.</i> 11. |
| 12 | <i>Icosandria</i> | hermaphrodite flowers having from 20 to 1000 Stamina inserted into the Calyx, <i>fig.</i> 12. |
| 13 | <i>Polyandria</i> | hermaphrodite flowers having from 20 to 1000 Stamina inserted into the Receptacle or end of the stalk, <i>fig.</i> 13. |
| 14 | <i>Didynamia</i> | hermaphrodite flowers having 4 Stamina, two of which are long and two short, <i>fig.</i> 14. |
| 15 | <i>Tetradynamia</i> | hermaphrodite flowers having 6 Stamina, four long and two short, <i>fig.</i> 15. |
| 16 | <i>Monadelphia</i> | hermaphrodite flowers having their Filaments united or connected into one body, <i>fig.</i> 16. |
| 17 | <i>Diadelphia</i> | hermaphrodite flowers having their Filaments united into two bodies, <i>fig.</i> 17. |
| 18 | <i>Polyadelphia</i> | hermaphrodite flowers having their Filaments united in more than two distinct fasciculi or bundles, <i>fig.</i> 18. |
| 19 | <i>Syngenesia</i> | hermaphrodite flowers having their Antheræ united into a tube or cylinder, <i>fig.</i> 19. |
| 20 | <i>Gynandria</i> | hermaphrodite flowers having their Stamina inserted into the Pistillum, or Receptacle lengthened out, <i>fig.</i> 20. |
| 21 | <i>Monoecia</i> | male flowers and female flowers situated separately on the same plant, <i>fig.</i> 21. |
| 22 | <i>Dioecia</i> | male and female flowers situated separately on two plants of the same species, <i>fig.</i> 22. |
| 23 | <i>Polygamia</i> | hermaphrodite and male or female situated on the same plant, <i>fig.</i> 23. |
| 24 | <i>Cryptogamia</i> | no visible Stamina, <i>fig.</i> 24. |

* Hermaphrodite flowers are such as have both a Stamen and Pistillum: the Pistilla which makes them hermaphrodite flowers, are omitted in the representation of the first eighteen Classes, that they might appear less confused.

Method of investigating or finding out any particular Class.

I find a plant which produceth flowers with two Stamina, (we will for example suppose it to be a Veronica or Speedwell,) desirous of knowing to what Class it belongs, I thus make the enquiry and reason with myself. It has very evidently two Stamina; it cannot therefore belong to the first Class *Cryptogamia*, as in that no Stamen is discoverable. I next examine if all its flowers are Hermaphrodite, and finding that they are, I conclude it doth not belong to the next three Classes, *Polygamia*, *Dioecia*, or *Monœcia*. It is necessary that I now observe into what part of the flower the Stamina are inserted, and finding that they spring from the Corolla, I am certain it is not of the Class *Gynandria*, as in that they arise from the Pistillum, or from the Receptacle elongated or lengthened out. I now proceed further, and examine whether the Stamina are united either by their Antheræ or Filaments, finding that they are quite unconnected with each other, I pass by the next four Classes, *Syngenesia*, *Polyadelphia*, *Diadelphia* and *Monadelphia*. What I am next to attend to is the number and equality of the Stamina; as this is never regarded but when there are either six or four Stamina. I pass by the next two Classes, *Tetradynamia* and *Didynamia* also. The number of the Classes in which I have now to look, is reduced to almost one half: I pursue my enquiry, and finding that there are less than twenty Stamina in my flower, and that these are not inserted either into the Receptacle or Calyx, I rest assured of its not belonging to the Class *Polyandria* or *Icosandria*. I now have only to examine the remaining eleven Classes, in which regard is had to number only, and finding only two Stamina, rightly conclude it to be of the Class *Diandria*.

So variable is nature in her productions, that the exact number of Stamina which should occur in a flower, will frequently be increased or diminished; hence the Student should not hastily determine on a Class from a single blossom, but should form his judgment from a view of several: and it will even sometimes happen, that while most of the plants of the same genus are Hermaphrodite, one or more species shall have the Stamina and Pistilla in distinct flowers, as in the *Lychnis Dioica*, &c. This circumstance tends much to mislead the Student: but LINNÆUS, in his *Genera Plantarum*, to which the reader is referred, has endeavoured to remedy this inconvenience.

Observations

Observations on the Classes.

In the first eleven Classes as far as *Dodecandria*, regard is had merely to the number of the Stamina, independent of every other circumstance, except that of their being hermaphrodite flowers: but the student should cautiously avoid the idea of all the Classes being formed on this principle, least when he takes a flower in his hand, he should expect to find the Class to which it belongs from the number of its Stamina only.

In the next two Classes, *Icosandria* and *Polyandria*, regard is had to insertion as well as number. If he finds a flower with twenty Stamina, or from that number to a thousand, with the Stamina inserted into the Calyx, it is of the Class *Icosandria*. There is a very great difference in the number of the Stamina in this Class: some of the fruit-bearing trees produce scarce twenty, while in the Rose and Pomegranate they are far more numerous: and in the night-blowing *Cereus* their number is scarce to be counted.

In *Polyandria* the Stamina are generally very numerous, and inserted in a regular manner around the edge of the Receptaculum or end of the Stalk.

In the next two Classes, *Didynamia* and *Tetradynamia*, number and equality are to be attended to; but in general, if the number be more than four or six, no regard is had to equality. This Class in general is easy; most of the flowers belonging to it are termed *ringentes*, as in the *Dead Nettle*, *a*: but all such flowers do not belong to this Class, as *Sage*, &c. which are diandrous: nor is the inequality of the Stamina in some of the verticillate plants so perceivable as could be wished, as in the Mints &c.

All the flowers of the Class *Tetradynamia* are easily investigated, being a natural Class, with *cruciform* or *cross-shaped flowers*, *b*.

Most of the flowers in the Class *Monadelphia* show the union of the Filaments pretty distinctly, as in the Mallow, *c*: but in the Geraniums the union of the Filaments is scarcely sufficient to make them Monadelphous.

In the Class *Diadelphia*, the form of the flower, which is the same from the Common Pea, (*d*,) to the smallest Trefoil, is in general a good guide to distinguish this Class, which is also a natural one: and the division into two bodies, in one of which nine Filaments are united, and in the other a single one, is very conspicuous in the Common Garden Pea: but in some flowers of this kind the Filaments are not easily separated in this manner.

The Class *Polyadelphia* fortunately contains but few flowers, as it is a difficult one, and does not distinctly retain its character. In some of the *Hypericums* the division of the Filaments into three or more bundles is very apparent, while in others it is scarce discernable.

The Class *Syngenesia* is perhaps the most difficult for the student to acquire a distinct idea of, owing to the smallness of the parts and the singular coalescence or union of the Antheræ. I have endeavoured to make it plain; first by shewing the several different flowers of this Class which most usually occur, *e, f, g*; and next by giving a magnified view of the tube formed by the union of the Antheræ, *b*, with the same opened, *i*.

The Class *Gynandria* is also a difficult one, as it contains many flowers whose structure is not easily investigated by the botanic student, particularly the Orchis tribe, in which the Stamina grow from a kind of additional part to the Germen. In the Passion Flower and Cuckow-pint, where they grow out of the Receptaculum or end of the stalk lengthened out, the character of the Class is more distinctly seen.

Monoecia and *Dioecia* are obvious enough; familiar instances occur in the Hazel and Willow.

In the Class *Polygamia* many of the flowers are very minute, as in Pellitory of the Wall; the student will therefore do well to examine such plants of this Class as have the parts of fructification larger, as Maple and Sycamore.

The Class *Cryptogamia* contains such plants as have no visible Stamen or Pistillum: most of these nevertheless produce seed, which is contained in very minute Capsules, as in the Ferns.





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Sansom sculp.

The Orders which depend on characters distinct from those of the Classes.

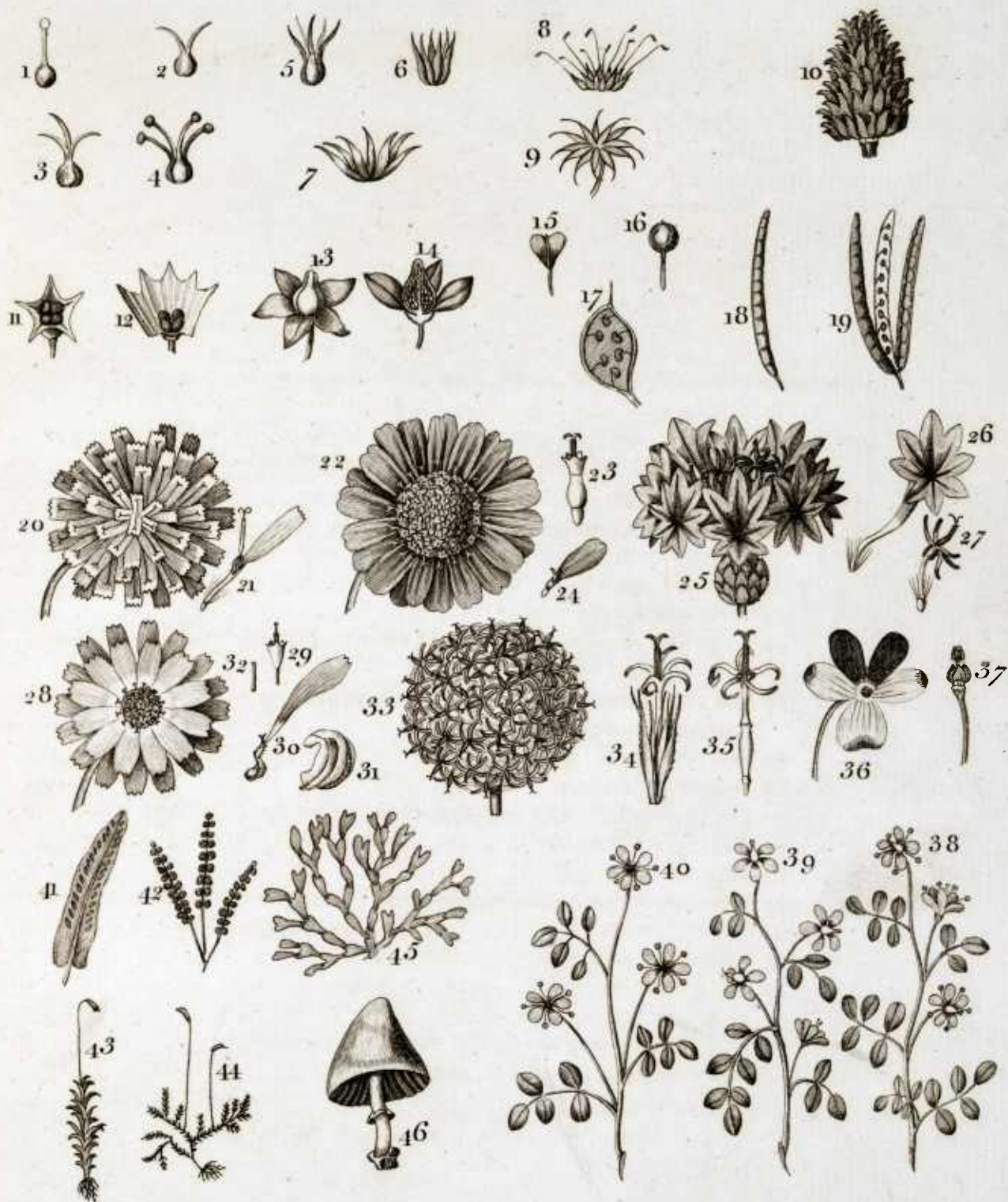
Monogynia.
 Digynia.
 Trigynia.
 Tetragynia.
 Pentagynia.
 Hexagynia.
 Heptagynia.
 Decagynia.
 Dodecagynia.
 Polygynia.
 Gymnospermia.
 Angiospermia.
 Siliculosa.
 Siliquosa.
 Polygamia æqualis.
 Polygamia superflua.
 Polygamia necessaria.
 Polygamia frustranea.
 Polygamia fegregata.
 Polygamia monogamia.
 Trioecia.
 Filices.
 Musci.
 Algæ.
 Fungi.

N. B. Many of the Orders take the character of the Classes, as in *Monadelphia Polyandria*, &c. here the Order is founded on the same principle as that of the Class *Polyandria*; it was therefore thought unnecessary to give a figure of such Orders; for whoever understands the principles on which the Classes are founded, cannot fail of understanding the Orders also.

The

The Figures which explain the Orders referred to.

- FIG. 1 *Monogynia*.
 2 *Digynia*.
 3 *Trigynia*.
 4 *Tetragynia*.
 5 *Pentagynia*.
 6 *Hexagynia*.
 7 *Heptagynia*.
 8 *Decagynia*.
 9 *Dodecagynia*.
 10 *Polygynia*.
 11 *Gymnospermia*, the seeds within the Calyx.
 12 The Calyx laid open to shew them more plainly.
 13 *Angiospermia*, the seeds within the Seed-vessel.
 14 The Seed-vessel divided longitudinally into two.
 15, 16, 17 Seed-vessels of various shapes in the Order *Siliculosa*.
 18 *Siliquosa*
 19 The pod opened.
 20 *Polygamia æqualis*.
 21 One of the hermaphrodite florets, of which kind the whole flower is composed.
 22 *Polygamia superflua*.
 23 One of the hermaphrodite florets, of which kind the center of fig. 22 is composed, somewhat magnified.
 24 One of the female florets taken from the circumference of fig. 22.
 25 *Polygamia frustranea*.
 26 One of the neutral or barren florets, of which kind the circumference is composed.
 27 One of the hermaphrodite florets, of which kind the center is composed.
 28 *Polygamia necessaria*.
 29 One of the hermaphrodite barren florets, of which kind the center is composed.
 30 One of the female fertile florets, of which kind the circumference is composed.
 31 The fertile seed of the female florets, fig. 30.
 32 The barren seed of the central hermaphrodite florets, fig. 29.
 33 *Polygamia segregata*.
 34 One of the florets surrounded by a kind of Calyx.
 35 The same with the Calyx removed.
 36 *Polygamia monogamia*.
 37 The Antheræ and Pistillum separated from the flower.
 38, 39, 40 *Trioecia*.
 41, 42 *Filices*.
 43, 44 *Musci*.
 45 *Algæ*.
 46 *Fungi*.



Engraved for W. Curtis, "Botanic Lectures."

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Sansom sculp.

THE ORDINES or ORDERS

Explained and illustrated by Examples,

MOST OF WHICH ARE TAKEN FROM

COMMON ENGLISH PLANTS.

N. B. Such as have an Asterisk before them are Foreign.

CLASS I. MONANDRIA contains two Orders.

ORDERS.

EXAMPLES.

- 1 *Monogynia* having one Pistillum. *Salicornia*, Jointed Glass-wort. **Canna*, Indian Flowering Reed.
- 2 *Digynia* two Pistilla. *Callitriche*, Star-headed Water Chickweed. **Blitum*, Strawberry Spinage.

CLASS II. DIANDRIA contains three Orders.

- 1 *Monogynia* having one Pistillum. *Ligustrum*, Privet. *Veronica*, Speedwell.
- 2 *Digynia* two Pistilla. *Anthoxanthum*, Sweet-scented Vernal-Grass.
- 3 *Trigynia* three Pistilla. **Piper*, Pepper.

CLASS III. TRIANDRIA contains three Orders.

- 1 *Monogynia* having one Pistillum. *Valeriana*, Valerian. *Crocus*, Saffron. *Iris*.
- 2 *Digynia* two Pistilla. *Gramina pleraque*, most of the Grasses.
- 3 *Trigynia* three Pistilla. *Montia*, Water Chickweed or Blinks.

CLASS IV. TETRANDRIA contains three Orders.

- 1 *Monogynia* having one Pistillum. *Dipsacus*, Teasel. *Scabiosa*, Scabious. *Plantago*, Plantain.

ORDERS.

EXAMPLES.

- 2 *Digynia* having two Pistilla. *Aphanes*, Parsley-piert.
3 *Tetragynia* . . . four Pistilla. *Potamogeton*, Pondweed.

CLASS V. PENTANDRIA contains six Orders.

- 1 *Monogynia* having one Pistillum. *Primula*, Primrose. *Convolvulus*. *Lonicera*, Honeyfuckle.
2 *Digynia* . . . two Pistilla. *Gentiana Centaurium*, Centory. *Conium*, Hemlock. *Ulmus*, Elm.
3 *Trigynia* . . . three Pistilla. *Viburnum*, Wayfaring Tree. *Sambucus*, Elder.
4 *Tetragynia* . . . four Pistilla. *Parnassia*, Grass of Parnassus.
5 *Pentagynia* . . . five Pistilla. *Statice*, Thrift. *Linum*, Flax. *Drosera*, Sundew.
6 *Polygynia* . . . many Pistilla. *Myosurus*, Mouse-tail.

CLASS VI. HEXANDRIA contains five Orders.

- 1 *Monogynia* having one Pistillum. *Hyacinthus*, Hyacinth. *Convallaria*, Lily of the Valley. *Narcissus*, Daffodil.
2 *Digynia* . . . two Pistilla. **Oryza*, Rice.
3 *Trigynia* . . . three Pistilla. *Rumex*, Dock. *Colchicum*, Meadow Saffron.
4 *Tetragynia* . . . four Pistilla. **Petiveria*, Guinea Hen Weed.
5 *Polygynia* . . . many Pistilla. *Alisma*, Water Plantain.

CLASS VII. HEPTANDRIA contains four Orders.

- 1 *Monogynia* having one Pistillum. *Trientalis*, Chickweed Winter Green. **Æsculus*, Horse-Chestnut.
2 *Digynia* . . . two Pistilla. **Limeum*.
3 *Trigynia* . . . three Pistilla. **Saururus*, Lizard's-tail.
4 *Heptagynia* . . . seven Pistilla. **Septas*.

CLASS VIII. OCTANDRIA contains four Orders.

- 1 *Monogynia* having one Pistillum. *Epilobium*, Willow-Herb. *Erica*, Heath. *Daphne*, Mezereon.
2 *Digynia* . . . two Pistilla. **Galenia*. **Weinmannia*, Mountain Chickweed.
3 *Trigynia* . . . three Pistilla. *Polygonum*, Bistort. *Perficaria*. Knot-Grass.
4 *Tetragynia* . . . four Pistilla. *Paris*, Herb Paris. *Adoxa Moschatellina*, Tuberous Moschatel.

CLASS IX. ENNEANDRIA contains three Orders.

- 1 *Monogynia* having one Pistillum. **Laurus*, Bay, Sassafras.
2 *Trigynia* . . . three Pistilla. **Rheum*, Rhubarb.
3 *Hexagynia* . . . six Pistilla. *Butomus*, Flowering Rush.

CLASS

CLASS X. DECANDRIA contains five Orders.

ORDERS.

EXAMPLES

- 1 *Monogynia* having one Pistillum. *Arbutus*, Strawberry Tree. **Ruta*, Rue. *Pyrola*, Winter Green.
- 2 *Digynia* two Pistilla. *Saxifraga*, Saxifrage. *Dianthus*, Pink. *Saponaria*, Sope-wort.
- 3 *Trigynia* three Pistilla. *Cucubalus*, Spatling Poppy. *Stellaria*, Stich-wort.
- 4 *Pentagynia* five Pistilla. *Sedum*, Stonecrop. *Oxalis*, Wood-Sorrel. *Agrostemma*, Cockle.
Lychnis, Meadow Pink.
- 5 *Decagynia* ten Pistilla. **Basella*, American Nightshade.

CLASS XI. DODECANDRIA contains six Orders.

- 1 *Monogynia* having one Pistillum. *Asarum*, Asarabacca. *Lythrum*, Purple-spiked Loofestriefe.
- 2 *Digynia* two Pistilla. *Agrimonia*, Agrimony. **Heliocarpus*.
- 3 *Trigynia* three Pistilla. *Reseda*, Dyers-Weed. *Euphorbia*, Spurge.
- 4 *Pentagynia* five Pistilla. **Glinus*.
- 5 *Dodecagynia* . . . twelve Pistilla. *Sempervivum*, Houfeleek.
- 6 *Polygynia* many Pistilla. **Alisma Cordifolia*.

CLASS XII. ICOSANDRIA contains five Orders.

- 1 *Monogynia* having one Pistillum. *Prunus*, Black Thorn. **Myrtus*, Myrtle. **Amygdalus*, Almond.
- 2 *Digynia* two Pistilla. *Cratægus*, Hawthorn, White Bean Tree, Wild Service-Tree.
- 3 *Trigynia* three Pistilla. *Sorbus*, Mountain Ash, True Service Tree.
- 4 *Pentagynia* five Pistilla. *Mespilus*, Medlar. *Spiræa Ulmaria*, *Filipendula*, Meadow-Sweet,
Drop-wort.
- 5 *Polygynia* many Pistilla. *Rosa*, Rose. *Rubus*, Bramble. *Tormentilla*, Tormentil. *Fragaria*, Strawberry.

CLASS XIII. POLYANDRIA contains seven Orders.

- 1 *Monogynia* having one Pistillum. *Papaver*, Poppy. *Chelidonium*, Celandine. *Nymphaea*, Water-Lily.
- 2 *Digynia* two Pistilla. **Fothergilla*. **Calligonum*. **Pæonia*, Piony.
- 3 *Trigynia* three Pistilla. *Delphinium*, Larkspur. *Aconitum*, Monkshood.
- 4 *Tetragynia* four Pistilla. **Cimicifuga*. **Tetracera*. **Caryocar*.
- 5 *Pentagynia* five Pistilla. *Aquilegia*, Columbine. **Rcaumuria*. **Nigella*, Fennel-Flower.
- 6 *Hexagynia* six Pistilla. *Stratiotes*, Fresh-water Soldier.
- 7 *Polygynia* many Pistilla. *Adonis*, Pheasants - Eye. *Ranunculus*, Crowfoot. *Helleborus*,
Hellebore.

CLASS

CLASS XIV. DIDYNAMIA contains two Orders.

ORDERS.

EXAMPLES.

- 1 *Gynnospermia* Seeds contained in the bottom of the Calyx. *Glechoma*, Ground-Ivy. *Lamium*, Dead Nettle. *Melissa*, Baum.
- 2 *Angiospermia* Seeds contained in a Pericarpium. *Antirrhinum*, Snapdragon. *Digitalis*, Fox-glove. *Scrophularia*, Water-Betony.

CLASS XV. TETRADYNAMIA contains two Orders.

- 1 *Siliculosa* Seeds in a small short, or round pod. *Draba*, Whitlow-Grafs. *Hesperis*, Honefty. *Thlaspi*, Shepherds-Purse.
- 2 *Siliquosa* Seeds in a long slender pod. *Cheiranthus*, Wall-Flower. *Brassica*, Cabbage. *Sinapis*, Mustard.

CLASS XVI. MONADELPHIA contains five Orders.

- 1 *Pentandria* having five Stamina. **Hermannia*. **Waltheria*. **Melochia*.
- 2 *Decandria* . . . ten Stamina. *Geranium*, Crane's-bill.
- 3 *Endecandria* . . . eleven Stamina. **Brownea*.
- 4 *Dodecandria* . . . twelve Stamina. **Pentapetes*.
- 5 *Polyandria* . . . many Stamina. *Malva*, Mallow.

CLASS XVII. DIADELPHIA contains four Orders.

- 1 *Pentandria* having five Stamina. **Monnicria*.
- 2 *Hexandria* . . . six Stamina. *Fumaria*, Fumitory.
- 3 *Octandria* . . . eight Stamina. *Polygala*, Milk-wort.
- 4 *Decandria* . . . ten Stamina. *Pisum*, Pea. *Ulex*, Furze. *Trifolium*, Trefoil.

CLASS XVIII. POLYADELPHIA contains four Orders.

- 1 *Pentandria* having five Stamina. **Theobroma*.
- 2 *Dodecandria* . . . twelve Stamina. **Monsonia*.
- 3 *Icosandria* . . . twenty Stamina. **Citrus*, Orange.
- 4 *Polyandria* . . . many Stamina. *Hypericum*, St. John's Wort.

CLASS XIX. SYNGENESIA contains six Orders.

- 1 *Polygamia equalis* when all the flosculi or florets are hermaphrodite. *Leontodon*, Dandelion. *Sonchus*, Sow-Thistle. *Hieracium*, Hawkweed. *Carduus*, Common Thistle.
- 2 *Polygamia superflua* when the florets in the center are hermaphrodite, and those in the circumference female. *Anthemis*, Mayweed. *Bellis*, Daisy. *Senecio*, Groundsel. *Chrysanthemum* Ox-eye Daisy. *Tussilago*, Coltsfoot. *Inula*, Elecampane.

3 *Polygamia*

ORDERS.

EXAMPLES

- 3 *Polygamia frustranea* when the florets in the center are hermaphrodite, and those in the circumference barren. *Centaurea*, Blue-Bottle, Knapweed. **Helianthus*, Sunflower. **Rudbeckia*.
- 4 *Polygamia necessaria* when the hermaphrodite florets in the center produce no seed, but the female florets in the circumference produce perfect seed. **Calendula*, Marigold. **Silphium*. *Gnaphalium*, Cudweed. **Arctotis*.
- 5 *Polygamia segregata* many partial flower cups or calyces within the common calyx, separating the flosculi or florets. **Echinops*, Globe Thistle. **Gundelia*. **Stoebe*. **Oedera*. **Sphaeranthus*.
- 6 *Polygamia Monogamia* contains simple flowers which have their Antheræ united. *Viola*, Violet. *Impatiens*, Touch-me-not, **Balsam*. **Lobelia* or Cardinal Flower.

CLASS XX. GYNANDRIA contains eight Orders.

- 1 *Diandria* having two Stamina. *Orcbis*. *Cypripedium*, Ladies Slipper.
- 2 *Triandria* . . . three Stamina. **Sisyrinchium*. **Ferraria*.
- 3 *Tetrandria* . . . four Stamina. **Nepenthes*.
- 4 *Pentandria* . . . five Stamina. **Passiflora*, Passion Flower. **Gluta*.
- 5 *Hexandria* . . . six Stamina. **Aristolochia*. **Pistia*.
- 6 *Decandria* . . . ten Stamina. **Kleinbovia*. **Helicteres*, Screw Tree.
- 7 *Dodecandria* . . . twelve Stamina. **Cytinus*.
- 8 *Polyandria* . . . many Stamina. *Arum*, Cuckow-pint, **Dragons*.

CLASS XXI. MONOECIA contains eleven Orders.

- 1 *Monandria* having one Stamen. *Chara*. *Zannichellia*, Horned Pondweed. **Elatarium*, Wild Cucumber.
- 2 *Diandria* . . . two Stamina. *Lemna*, Duckmeat. **Anguria*.
- 3 *Triandria* . . . three Stamina. *Sparganium*. Burr-Reed. *Typha*, Cats-tail. *Carex*.
- 4 *Tetrandria* . . . four Stamina. *Urtica*, Nettle. **Morus*, Mulberry. *Buxus*, Box. *Betula*, Birch.
- 5 *Pentandria* . . . five Stamina. *Xanthium*, Lesser Burdock. **Amaranthus*, Amaranth.
- 6 *Hexandria* . . . six Stamina. **Zizania*. **Pharus*.
- 7 *Heptandria* . . . seven Stamina. **Guettarda*.
- 8 *Polyandria* more than seven Stamina. *Fagus*, Beech. *Sagittaria*, Arrow-head. *Corylus*, Hazel. *Quercus*, Oak.
- 9 *Monadelphica* Filaments united. *Pinus*, Fir. **Hura*, Sand-box Tree. **Thuja*, Arbor Vitæ. **Cupressus*, Cypress. **Ricinus*, Palma Christi.
- 10 *Syngenesia* Antheræ united. **Cucumis*, Cucumber. **Trichosanthes*, Serpent Cucumber. **Cucurbita*, Gourd. *Momordica*, Male Balsam Apple.
- 11 *Gynandria* Stamina growing out of the Pistillum. *Andrachne*, Bastard Orpine. **Agyneja*.

CLASS XXII. DIOECIA contains fourteen Orders.

ORDERS.

EXAMPLES.

- 1 *Monandria* having one Stamen. **Najas*.
- 2 *Diandria* . . two Stamina. *Salix*, Willow. **Vallisneria*.
- 3 *Triandria* . . three Stamina. *Empetrum*, Crow Berries. **Ostrya*, Poets Cassia.
- 4 *Tetrandria* . . four Stamina. *Hippophaë*, Sea Buckthorn. *Viscum*, Mistletoe. *Myrica*, Gale.
- 5 *Pentandria* . . five Stamina. **Cannabis*, Hemp. *Humulus*, Hop. **Spinachia*, Spinach. **Pistachia*, Pistachia Nut.
- 6 *Hexandria* . . six Stamina. *Tamus*, Black Bryony. **Smilax*, Rough Bindweed. **Dioscorea*.
- 7 *Octandria* . . eight Stamina. *Populus*, Poplar. *Rhodiola*, Rose-Root.
- 8 *Enneandria* . . nine Stamina. *Mercurialis*, Mercury. *Hydrocharis*, Frogbit.
- 9 *Decandria* . . ten Stamina. **Carica*, Papaw. **Schinus*, Indian Mastich.
- 10 *Dodecandria* . twelve Stamina. **Menispermum*, Moon Seed. **Datisca*, Bastard Hemp.
- 11 *Polyadelphia* . many Stamina. **Cliffortia*.
- 12 *Monadelphia* Filaments united. *Juniperus*, Juniper. *Taxus*, Yew. **Ephedra*, Shrubby Horsetail.
- 13 *Syngenesia* Antheræ united. *Ruscus*, Butchers Broom.
- 14 *Gynandria* Stamina growing out of the Pistillum. **Clusia*.

CLASS XXIII. POLYGAMIA contains three Orders.

- 1 *Monœcia* Hermaphrodite, and male or female flowers on the same plant. *Valantia*, Cross-wort. *Acer*, Maple. *Parietaria*, Pellitory of the Wall. *Atriplex*, Orach.
- 2 *Dioœcia* Hermaphrodite, and male or female flowers on separate plants. *Fraxinus*, Ash. **Diospyrus*, Indian Date Plumb. **Pisonia*, Fingrigo. **Gleditsia*, Three-thorned Acacia.
- 3 *Triœcia* Hermaphrodite, male, and female flowers, growing separately on three distinct plants of the same species. **Ceratonia*, Carob Tree. **Ficus*, Fig Tree.

CLASS XXIV. CRYPTOGRAMIA contains four Orders.

- 1 *Filices* comprehending the *Filices*, Ferns. *Ophioglossum*, Adders-Tongue. *Equisetum*, Horsetail. *Pilularia*, Pepper-Grass, &c.
- 2 *Musci* comprehending the *Musci*, Mosses of different kinds.
- 3 *Algæ* including the *Fucus*, Sea Weed. *Lichen*, Liverwort. *Jungermannia*, &c.
- 4 *Fungi* containing the *Agaricus*, Mushroom. *Lycoperdon*, Puff-Ball: and other Plants of that Tribe.

Observations

Observations on some of the Orders.

As we thought it necessary to caution the Student against entertaining an idea of all the Classes being formed on the *number of the Stamina* merely, so he should be no less on his guard against entertaining a notion of all the Orders being taken from the *number of the Pistilla*, as it is only the Orders of the *first ten Classes* which are formed from this circumstance, and those are so obvious, that the Student will find no difficulty in acquiring a knowledge of them.

The next two Orders, *Gymnospermia* and *Angiospermia*, are too plain to need any elucidation.

The Orders in the Classes *Siliculosa* and *Siliquosa*, are taken from the shape of the Seed-vessels. Those in the Order *Siliculosa* are very apt to vary in their form; sometimes being nearly triangular, as in *Shepherds Purse*; oval, as in *Whitlow Grass*; or spherical, as in *Alyssum*.

The Orders in the Class *Syngenesia*, will be clearly understood, by a reference to the Plates and to the Introduction.

The last Order of this Class *Monogamia*, has been considered by most Botanists as a kind of absurdity in terms: and it must be allowed, that the Antheræ in many other flowers, not brought by LINNÆUS into this Class, are as much united into a *tube*, particularly the *Nightshades*, as the *Violet* and some other flowers in this Order.

A reference to the Figures and Examples, will remove every difficulty respecting the remaining Orders.

F I N I S.